



# AFCTN Report

## 94-099

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94-069



Technical Publication Transfer Using:

Northrop Corporation's Data  
Supporting:

ASC/YSSA B-2 Program

(Contract #F33567-81-C0067/0051)

MIL-STD-1840A

MIL-D-28000A (IGES)

MIL-M-28001A (SGML)

MIL-R-28002A (Raster)

MIL-D-28003 (CGM)

Quick Short Test Report

13 June 1994



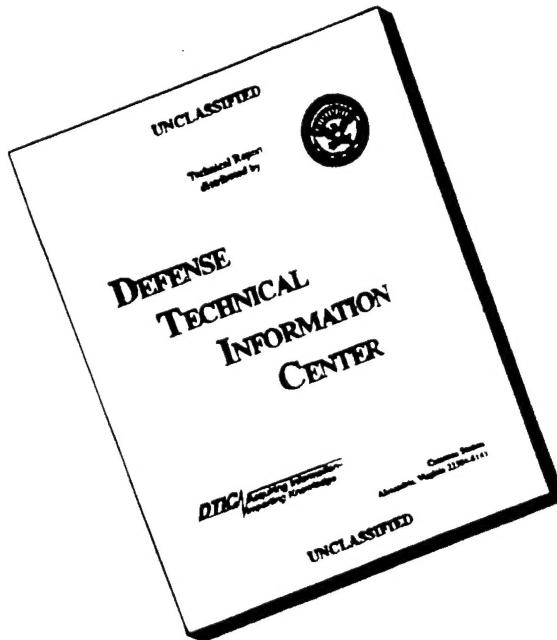
Prepared for  
Electronic Systems Center  
Air Force CALS Program Office  
HQ ESC/AV-2  
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**MIL-D-28000A (IGES)  
MIL-M-28001A (SGML)  
MIL-R-28002A (Raster)  
MIL-D-28003 (CGM)**

**Quick Short Test Report**

**13 June 1994**

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# Air Force CALS Test Bed

## *Notification of Test Results*

**13 June 1994**

This notice documents the results of an Air Force CALS Test Bed (AFCTB) Quick Short Test Report(QSTR) evaluation of data submitted by:

### **Northrop Corporation**

Identified as follows:

|                 |                                       |
|-----------------|---------------------------------------|
| Title:          | <b>Technical Publication Transfer</b> |
| Program:        | <b>B-2</b>                            |
| Program Office: | <b>ACS/YSSA</b>                       |
| Contract No.:   | <b>F33567-81-C0067/0051</b>           |
| QSTRNo.:        | <b>AFCTB-ID 94-069</b>                |

Received on the following media: **9-Track Tape**

The results of the QSTR evaluation are as follows:

|                             |             |
|-----------------------------|-------------|
| MIL-STD-1840A Standard      | <b>Pass</b> |
| MIL-STD-1840A Media Format: | <b>Pass</b> |
| MIL-D-28000A IGES:          | <b>Pass</b> |
| MIL-M-28001A SGML:          | <b>Pass</b> |
| MIL-R-28002A Raster:        | <b>Pass</b> |
| MIL-D-28003 CGM:            | <b>Pass</b> |

Formal results with associated disclaimer are documented and available from the AFCTB.

**Air Force CALS Test Bed  
HQ ESC/AV-2P  
4027 Colonel Glenn Highway, Suite 300  
Dayton, OH 45431-1672  
Phone: 513-257-3085      FAX: 513-257-5881**

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## 1. Introduction

### 1.1 Background

The Department of Defense (DoD) Air Force Continuous Acquisition and Life-cycle Support (CALS) Test Network (AFCTN) is conducting tests of the military standard for the Automated Interchange of Technical Information, MIL-STD-1840A, and its companion suite of military specifications. The AFCTN is a DoD sponsored confederation of voluntary participants from industry and government managed by the Electronic Systems Center (ESC).

The primary objective of the AFCTN is to evaluate the effectiveness of the CALS standards for technical data interchange and to demonstrate the technical capabilities and operational suitability of those standards. Two general categories of tests are performed to evaluate the standards; formal and informal.

Formal tests are large and comprehensive, which follow a written test plan, require specific authorization from the DoD, and may take months to prepare, execute, and report.

Informal tests are quick and short, used by the AFCTN technical staff, to broaden the testing base. They include representative samples of the many systems and applications used by AFCTN participants. They also allow the AFCTN staff to gain feedback from many industry and government interpretations of the standards, to increase the base of participation in the CALS initiative, and respond to the many requests for help that come from participants. Participants take part voluntarily, benefit by receiving an evaluation of their latest implementation (interpretation) of the standards, interact with the AFCTN technical staff, gain experience using the standards, and develop increased confidence in them. The results of informal tests are reported in Quick Short Test Reports (QSTRs) that briefly summarize the standard(s) tested, the hardware and software used, the nature of the test, and the results.

## **1.2 Purpose**

The purpose of the informal test, reported in this QSTR, was to analyze Northrop Corporation's interpretation and use of the CALS standards in transferring technical publication data. Northrop used its CALS Technical Data Interchange System to produce data, in accordance with the standards, and delivered it to the AFCTN technical staff on a 9-track magnetic tape.

## 2. Test Parameters

**Test Plan:** AFCTB 94-069

**Date of Evaluation:** 13 June 1994

**Evaluator:**  
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Air Force CALS Test Bed  
DET 2 HQ ESC/AV-2P  
4027 Colonel Glenn Hwy  
Suite 300  
Dayton OH 45431-1672

**Data Originator:**  
J.P. Kent  
Northrop Corporation  
B2 Division, M/S R213/UM  
8900 E. Washington Blvd  
Pico Rivera CA 90660  
(310) 948-0624

**Data Description:**  
Technical Manual Test  
3 Document Declaration files  
3 Document Type Definitions (DTDs)  
4 Initial Graphics Exchange Specification (IGES) files  
3 Text/Standard Generalized Markup Language (SGML) files  
1 Raster file  
5 Computer Graphics Metafile (CGM) files

**Data Source System:**  
1840  
**HARDWARE**  
SUN IPX  
**SOFTWARE**  
Intergrated Technical Data System (ITDS) v2

IGES  
**HARDWARE**  
SUN IPX  
**SOFTWARE**  
Northrop ITDS Converter - GEF\_IGES

Text/SGML

**HARDWARE**

SUN IPX

**SOFTWARE**

ITDS v2

Raster

**HARDWARE**

SUN IPX

**SOFTWARE**

ITDS v2

CGM

**HARDWARE**

SUN IPX

**SOFTWARE**

Northrop B2 ITDS GEF

**Evaluation Tools Used:**

**MIL-STD-1840A (TAPE)**

SUN 3/280

AFCTN *Tapetool v1.2.10 UNIX*  
XSoft *CAPS/CALS v40.4*

**MIL-D-28000 (IGES)**

HP 735

InterCAP *X-Change v7.82*  
Island Software *IslandDraw v3.0*  
Carberry *CADLeaf v3.1.2*

SGI Indigo2

*Cadkey v6.0*  
IDA *CALSVIEW*  
International TechneGroup Incorporated  
(ITI) *IGES/Works v2.0*

Sun SparcStation 2

AUTODESK *AutoCAD R12*  
Carberry *CADLeaf Plus v3.1*  
IGES Data Analysis (IDA) *Parser/Verifier v92*  
IDA *IGESView v3.05*  
International TechneGroup Incorporated  
(ITI) *IGES/Works v1.3*

PC 486/50

IDA *IGESView Windows*

**MIL-M-28001 (SGML)**

PC 486/50

Exoterica **XGMNormalizer v1.2e3.2**  
Exoterica **Validator v2.0 exl**  
McAfee & McAdam **Sema Mark-it v2.3**  
Public Domain **sgmls**

**MIL-R-28002 (Raster)**

HP 735

InterCAP **X-Change v7.82**  
Island Graphics **IslandPaint v3.0**

SGI Indigo2

IDA **CALSView**

SUN SparcStation 2

Carberry **CADLeaf Plus v3.1**

AFCTN **validg4**

AFCTN **xrastb.sun4**

PC 486

IDA **IGESView Windows**

Inset Systems **HiJaak Pro**

Expert Graphics **RxHighlight v1.0**

**MIL-D-28003 (CGM)**

HP 735

Carberry **CADLeaf Plus v3.1**

InterCAP **X-Change v7.82**

Island Software **IslandDraw v3.0**

SGI Indigo 2

IDA **CALSView**

SUN SparcStation 2

Island Software **IslandDraw v4.0**

PC 486/50

Advanced Technology Center

(ATC) **ForView R 1.0**

ATC **MetaCheck R 2.10**

Software Publishing Corporation

(SPC) **Harvard Graphics v3.05**

Inset Systems **HiJaak Pro**

Lotus **Freelance v2.01**

Corel **Ventura Publisher**

**Standards**

**Tested:**

MIL-STD-1840A

MIL-D-28000A

MIL-M-28001A

MIL-R-28002A

MIL-D-28003

### 3. 1840A Analysis

#### 3.1 External Packaging

The tape arrived at the Air Force CALS Test Bed (AFCTB) enclosed in a box in accordance with ASTM D 3951. The exterior of the box was marked with a magnetic tape warning label, as required by MIL-STD-1840A, para. 5.3.1.3.

The tape was enclosed in a barrier bag as required by MIL-STD-1840A, para. 5.3.1.2. Inspection of the tape reel showed the label indicating the recording density, as required by MIL-STD-1840A, para. 5.3.1. Enclosed in the box was a packing list showing all files recorded on the tape.

#### 3.2 Transmission Envelope

The 9-track tape received by the AFCTB contained MIL-STD-1840A files. The files were named per the standard conventions.

##### 3.2.1 Tape Formats

The tape was run through the AFCTN **Tapetool v1.2.10** utility. No errors were encountered while evaluating the contents of the tape labels.

The tape was read using XSoft's **CAPS read1840A** utility without any reported errors.

The physical structure of the tape meets the requirements defined in ANSI X3.27 and MIL-STD-1840A.

##### 3.2.2 Declaration and Header Fields

No errors were found in the Document Declaration file and data file headers. This portion of the tape meets the requirements defined in MIL-STD-1840A for CALS headers.

## 4. IGES Analysis

The tape contained four IGES files. These files were evaluated using IDA's **parser/verifier** set for CALS Class I. This utility reported no CALS errors. The Start Sections contained the required conformance statement.

The AFCTB has several tools for viewing IGES files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. Many of these products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings.

The files were converted using a utility available within the AFCTB, with no reported errors. The resulting files were read into Island Software's **IslandDraw**, displayed and printed without a reported error. It was noted that files Q204 and Q205 displayed on the left side of the screen. The remainder of the files were located off the page to the left. The origin point of these files was found to be a negative value. An undocumented feature of the translator was used to create complete images.

The files were read into AUTODESK's **AutoCAD R12** without a reported error. File Q206 had an error in the General Note block.

The files were converted using Cadkey's **ig2c** utility. The resulting files were read into Cadkey's **Cadkey**, displayed and printed. Several errors were noted in file Q206, this included the General Note block. An error was also noted in the imbedded font change block.

The files were read into Carberry's **CADLeaf** software without a reported error. When displayed and printed, file Q206 had an error in the General Note block. An error was also noted in the imbedded font change block.

The files were read using IDA's **CALSVIEW**. An error was noted in the General Note block where the vertical line of text was displayed horizontally.

The files were read using IDA's **IGESView** and **IGESView for Windows**. No errors were noted.

---

The files were read using InterCAPS' **X-Change**. No errors were noted.

The files were read using ITI's **IGESWorks** without a reported error. The files were displayed and printed.

The IGES files were converted using Rosetta Technologies' **Prepare** without a reported error. The resulting files were read into Rosetta Technologies' **Preview**, displayed and printed.

The IGES files had no reported CALS errors. Errors were noted on file Q206 by many of the IGES tools available within the AFCTB. The IGES files meet the CALS MIL-D-28000A, Amendment one specification.

## 5. SGML Analysis

The tape contained three DTD, three text, and three Format Output Specification Instance (FOSI) files. The DTD files were the same except for the graphic references. All graphic references were placed in one DTD and this file was used for all parsing operations.

The AFCTB has several parsers available for evaluating submitted DTD and text files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. These products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings unless specified in the report. Changes to DTD or text files required by each system are not documented in the report.

The text and DTD files were evaluated using the Exoterica **XGMLNormalizer** parser. This parser reported six warnings in the DTD for mixed content models. Shown below is the error and the section of the DTD it relates to.

```
:\\XGML\\XGMLNORM.EXE --
Warning on line 730 in file 9469.dtd:
An element with mixed content does not permit data characters
everywhere.
Spaces and line breaks in element 'NOTICE' may be treated as data
characters, forcing insertion of markup.
<!ELEMENT notice          - o          (para+ |%paracon;)      +(table) >
<!ATTLIST             notice  notctype  (%notctype;)      #IMPLIED
                           %secur;                      >
```

The text and DTD files were tested using the Exoterica **Validator exl** parser. Fifteen warnings were issued by this tool. Two warnings were issued for an empty element without a start tag.

```
<!-- **Warning** in "\\xgml\\9469.dtd", line 522:
An EMPTY element must have a start tag and must not have an end tag.
Therefore, it is inappropriate to specify an omissible start tag or
an inomissible end tag in its declaration.
```

---

```
The element is "DATABASE".  
<!ELEMENT database - - EMPTY >  
^^^^^  
-->
```

Six warnings were issued for mixed content models, and seven warnings were issued for elements used and not defined.

The text and DTD files from the tape were evaluated using McAfee & McAdam's *Sema Mark-it v2.3* parser. No errors or warnings were issued by this tool.

The text and DTD files from the tape were evaluated using the Public Domain *sgmls* parser. Two warnings were issued by this utility.

```
sgmls: Warning at \ws\9469.dtd, line 449 in declaration parameter 4:  
End-tag minimization should be "0" for EMPTY element
```

No errors were reported in any of the DTD or text files. However, all but one parsers reported warnings. The files meet the CALS MIL-M-28001A specification.

## 6. Raster Analysis

The tape contained one Raster file. This file was evaluated using the AFCTN **validg4** utility. This program reported that the file meets the CALS MIL-R-28002A specification.

The files were read into the AFCTN **xrastb.sun4** viewing utility. No problems were noted.

The AFCTB has several tools for viewing Raster files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. Many of these products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings.

The file was converted using a utility available within the AFCTB, without a reported error. The resulting file was read into Island Software's **IslandPaint** and displayed.

The Raster file was read into Carberry's **CADLeaf** software without a reported error. The image was displayed with no noted errors.

The file was read using IDA's **CALSVIEW** without a reported error.

The file was read into IDA's **IGESVIEW** and **IGESVIEW for Windows** without a reported error and displayed.

The file was read into and displayed using Inset Systems' **HiJaak for Windows** without a reported error.

The file was read using InterCAP's **X-Change** without a reported error.

The Raster file was converted using Rosetta Technologies' **Prepare** without a reported error. The resulting file was read into Rosetta Technologies' **Preview** and displayed.

The Raster file was imported into Expert Graphics' **Rx-Highlight** and displayed without a reported error.

The Raster file meets the CALS MIL-R-28002A specification.

---

## 7. CGM Analysis

The tape contained five CGM files. The files were evaluated using ATC's **MetaCheck** with CALS options. This utility reported no errors in the files.

The CGM files were evaluated using the beta AFCTN **validcgm** utility. This utility reported errors in the files. See Appendix D, Section 12.1.2 for file analysis results.

The AFCTB has several tools for viewing CGM files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. Many of these products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings.

The CGM files were converted using a utility available within the AFCTB, without a reported error. The resulting files were read into Island Software's **IslandDraw v3.1**, displayed and printed. File C104 had noted text overflow. The remaining files appeared to be correct.

The files were read into Carberry's **CADLeaf** software and displayed. File C104 had noted text overflow. The remaining files appeared to be correct. When the proportional font option was selected, most text was displayed within the defined boundaries. However, in two of the blocks the text still overflowed into the next block.

The files were read into IDA's **CALSVIEW**. All files appeared to display correctly with the exception of file C104. Text overflow was noted in many blocks along with the restricted text block.

The files were imported into ATC' **ForView**. None of the files displayed and they all caused General Protection error messages.

The files were imported into Lotus' **Freelance**. None of the files displayed and they all caused General Protection error messages.

The files were imported into SPC's **Harvard Graphics v3.05** with reported errors. None of the resulting images were

usable. The reported errors were line style, points adjusted, non-CGM entities encountered, and objects not translated.

When an attempt was made to read into Inset Systems' **HiJaak Pro**, all files generated a Real Precision Not Supported error message.

The files were imported directly into Island Software's **IslandDraw v4.0**. File C104 had text overflow in the restricted text block, and errors in the Elliptical arc blocks. In file C105 the arcs were not complete. File C108 also reported errors.

The files were read into InterCAP's **X-Change** without a reported error. No errors were noted in the displayed images.

An attempt to import the files into Corel's **Ventura Publisher** resulted in errors reported by file C104 and C108. The other two files imported without any errors, but the resulting images were not usable.

The CGM files meet the CALS MIL-D-28003 specification. However, none of the PC based software were able to successfully read the files. Only two of the workstation based software applications were successful.

## 8. Conclusions and Recommendations

The tape could be read properly using the AFCTN **Tapetool** Software without any reported errors or warnings. The physical structure and CALS headers were correct. This portion of the tape meets the CALS MIL-STD-1840A and ANSI X3.27 requirements.

The IGES files meet the CALS MIL-D-28000A specification.

The SGML files meet the CALS MIL-M-28001A specification. All but one parser, available within the AFCTB, reported warnings in the DTDs.

The Raster file meets the CALS MIL-R-28002A specification.

The CGM files meet the CALS MIL-D-28003 specification. However, most of the software tools available within the AFCTB, could not correctly display the images. This is because the PC-Based software products, used in this test, do not support the high precision levels (16 digit) required by the submitted CGM files.

The tape submitted by Northrop Corporation meets the CALS MIL-STD-1840A requirements.

## 9. Appendix A - Tapetool Report Logs

### 9.1 Tape Catalog

CALS Test Network Catalog Evaluation - Version 1.2; Release 10 (C)

Standards referenced:

MIL-STD-1840A (1987) - Automated Interchange of Technical Information  
ANSI X3.27 (1987) - File Structure and labeling of Magnetic Tapes  
for Information Interchange  
ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Fri Jun 10 15:58:53 1994

MIL-STD-1840A File Catalog

File Set Directory: /cals/u1210/Set072

Page: 1

| File Name | File Type            | Record            |                       |                        |
|-----------|----------------------|-------------------|-----------------------|------------------------|
|           |                      | Format/<br>Length | Block<br>Length/Total | Selected/<br>Extracted |
| D001      | Document Declaration | D/00260           | 02048/000001          | Extracted              |
| D002      | Document Declaration | D/00260           | 02048/000001          | Extracted              |
| D003      | Document Declaration | D/00260           | 02048/000001          | Extracted              |
| D001T001  | Text                 | D/00260           | 02048/000001          | Extracted              |
| D001G002  | DTD                  | D/00260           | 02048/000034          | Extracted              |
| D001H003  | Output Specification | D/00260           | 02048/000001          | Extracted              |
| D001C004  | CGM                  | F/00080           | 00800/000006          | Extracted              |

<<<< PART OF LOG FILE REMOVED HERE >>>>

|          |                      |         |              |           |
|----------|----------------------|---------|--------------|-----------|
| D002T001 | Text                 | D/00260 | 02048/000001 | Extracted |
| D002G002 | DTD                  | D/00260 | 02048/000034 | Extracted |
| D002H003 | Output Specification | D/00260 | 02048/000001 | Extracted |
| D002Q004 | IGES                 | F/00080 | 02000/000012 | Extracted |
| D002Q005 | IGES                 | F/00080 | 02000/000577 | Extracted |
| D002Q006 | IGES                 | F/00080 | 02000/000033 | Extracted |
| D002Q007 | IGES                 | F/00080 | 02000/000042 | Extracted |
| D003T001 | Text                 | D/00260 | 02048/000001 | Extracted |
| D003G002 | DTD                  | D/00260 | 02048/000034 | Extracted |
| D003H003 | Output Specification | D/00260 | 02048/000001 | Extracted |
| D003R004 | Raster               | F/00128 | 02048/000007 | Extracted |

Catalog Process terminated normally.

## 9.2 Tape Evaluation Log

CALS Test Network Tape Evaluation - Version 1.2; Release 10 (C)

**Standards referenced:**

ANSI X3.27 (1987) - File Structure and labeling of Magnetic Tapes  
for Information Interchange

ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Fri Jun 10 15:58:10 1994

## ANSI Tape Import Log

Allocating tape drive /dev/rmt0...

/dev/rmt0 allocated.

VOL1ITDS01 CONTROLLER

4

Label Identifier: VOL1  
Volume Identifier: ITDS01  
Volume Accessibility:  
Owner Identifier:  
Label Standard Version: 4

HDR1D001 ITDS0100010001000100 94160 94160 000000 CONTROLLER

Label Identifier: HDR1  
File Identifier: D001  
File Set Identifier: ITDS01  
File Section Number: 0001  
File Sequence Number: 0001  
Generation Number: 0001  
Generation Version Number: 00  
Creation Date: 94160  
Expiration Date: 94160  
File Accessibility:  
Block Count: 000000  
Implementation Identifier:

\*\*\*\*\* PART OF LOG FILE REMOVED HERE >>>>

##### End of Volume TTDS01 #####

##### End Of Tape File Set #####

Deallocating /dev/rmt0...

Tape Import Process terminated normally.

### 9.3 Tape File Set Validation Log

CALS Test Network File Set Evaluation - Version 1.2; Release 10 (C)

Standards referenced:

MIL-STD-1840A (1987) - Automated Interchange of Technical Information

Fri Jun 10 15:58:53 1994

MIL-STD-1840A File Set Evaluation Log

File Set: Set072

Found file: D001

Extracting Document Declaration Header Records...

Evaluating Document Declaration Header Records...

srcsys: John P. Kent, ITDS Chief Engineer, Northrop Corporation, B-2 Division,  
L590/UB, 8900 E. Washington Blvd., Pico Rivera, CA 90660-3765 (310) 948-0624

srcdocid: CALS\_CGM\_TEST2

srcrelid: NONE

chglvl: ORIGINAL

dteisu: 19930126

dstsys: Jeff Fisher, Integration Manager, USAF CALS Test Bed, HQ AFMC (I)/ENCT,  
TechneCenter, 4027 Col. Glenn Highway, Dayton, OH 45431-1601

dstdocid: STPRO25.7

dstrelid: NONE

dtetrn: 19940609

dlvacc: ASC/YSSA B-2 F33567-81-C0067/0051

filcnt: T1, H1, G1, C5

ttlcls: UNCLASSIFIED

doccls: UNCLASSIFIED

doctyp: TEST DOCUMENT

docttl: GEF->CGM Graphics Test

Found file: D001T001

Extracting Text Header Records...

Evaluating Text Header Records...

srcdocid: CALS\_CGM\_TEST2

dstdocid: STPRO25.7

txtfilid: W

doccls: UNCLASSIFIED

notes: NONE

```
Saving Text Header File: D001T001_HDR
Saving Text Data File: D001T001_TXT
Found file: D001G002
Extracting DTD Header Records...
Evaluating DTD Header Records...
```

```
srcdocid: CALS_CGM_TEST2
dstdocid: STPRO25.7
notes: NONE
```

```
Saving DTD Header File: D001G002_HDR
Saving DTD Data File: D001G002_DTD
```

```
Found file: D001H003
Extracting Output Specification Header Records...
Evaluating Output Specification Header Records...
```

```
srcdocid: CALS_CGM_TEST2
dstdocid: STPRO25.7
notes: NONE
```

```
Saving Output Specification Header File: D001H003_HDR
Saving Output Specification Data File: D001H003_OS
```

```
Found file: D001C004
Extracting CGM Header Records...
Evaluating CGM Header Records...
```

```
srcdocid: CALS_CGM_TEST2
dstdocid: STPRO25.7
txtfilid: W
figid: NONE
srcgph: allreal.cgm
doccls: UNCLASSIFIED
notes: NONE
```

```
Saving CGM Header File: D001C004_HDR
Saving CGM Data File: D001C004_CGM
```

<<<< PART OF LOG FILE REMOVED HERE >>>>

```
Evaluating numbering scheme...
No errors were encountered during numbering scheme evaluation.
Numbering scheme evaluation complete.
```

```
Checking file count...
No errors were encountered during file count verification.
File Count verification complete.
```

No errors were encountered in Document D001.

Found file: D002

Extracting Document Declaration Header Records...

Evaluating Document Declaration Header Records...

srcsys: John P. Kent, ITDS Chief Engineer, Northrop Corporation, B-2 Division,  
L590/UB, 8900 E. Washington Blvd., Pico Rivera, CA 90660-3765 (310) 948-0624

srcdocid: CALS\_IGES\_TEST2

srcrelid: NONE

chglvl: ORIGINAL

dteisu: 19930126

dstsys: Jeff Fisher, Integration Manager, USAF CALS Test Bed, HQ AFMC (I)/ENCT,  
TechneCenter, 4027 Col. Glenn Highway, Dayton, OH 45431-1601

dstdocid: STPRO25.9

dstrelid: NONE

dtetrn: 19940609

dlvacc: ASC/YSSA B-2 F33567-81-C0067/0051

filcnt: T1, H1, G1, Q4

ttlcls: UNCLASSIFIED

doccls: UNCLASSIFIED

doctyp: TEST DOCUMENT

docttl: GEF->IGES Graphics Test

Found file: D002T001

Extracting Text Header Records...

Evaluating Text Header Records...

srcdocid: CALS\_IGES\_TEST2

dstdocid: STPRO25.9

txtfilid: W

doccls: UNCLASSIFIED

notes: NONE

Saving Text Header File: D002T001\_HDR

Saving Text Data File: D002T001\_TXT

Found file: D002G002

Extracting DTD Header Records...

Evaluating DTD Header Records...

srcdocid: CALS\_IGES\_TEST2

dstdocid: STPRO25.9

notes: NONE

Saving DTD Header File: D002G002\_HDR

Saving DTD Data File: D002G002\_DTD

```
Found file: D002H003
Extracting Output Specification Header Records...
Evaluating Output Specification Header Records...
```

```
srcdocid: CALS_IGES_TEST2
dstdocid: STPRO25.9
notes: NONE
```

```
Saving Output Specification Header File: D002H003_HDR
Saving Output Specification Data File: D002H003_OS
```

```
Found file: D002Q004
Extracting IGES Header Records...
Evaluating IGES Header Records...
```

```
srcdocid: CALS_IGES_TEST2
dstdocid: STPRO25.9
txtfilid: W
figid: NONE
srcgph: apple2d.igs
doccls: UNCLASSIFIED
notes: NONE
```

```
Saving IGES Header File: D002Q004_HDR
Saving IGES Data File: D002Q004_IGS
```

```
<<<< PART OF LOG FILE REMOVED HERE >>>>
```

```
Evaluating numbering scheme...
No errors were encountered during numbering scheme evaluation.
Numbering scheme evaluation complete.
```

```
Checking file count...
No errors were encountered during file count verification.
File Count verification complete.
```

```
No errors were encountered in Document D002.
```

```
Found file: D003
Extracting Document Declaration Header Records...
Evaluating Document Declaration Header Records...
```

```
srcsys: John P. Kent, ITDS Chief Engineer, Northrop Corporation, B-2 Division,
L590/UB, 8900 E. Washington Blvd., Pico Rivera, CA 90660-3765 (310) 948-0624
srcdocid: CALS_RAS_TEST2
srcrelid: NONE
chglvl: ORIGINAL
dteisu: 19930126
```

```
dstsys: Jeff Fisher, Integration Manager, USAF CALS Test Bed, HQ AFMC (I)/ENCT,  
TechneCenter, 4027 Col. Glenn Highway, Dayton, OH 45431-1601  
dstdocid: STPRO25.11  
dstrelid: NONE  
dtetrn: 19940609  
dlvacc: ASC/YSSA B-2 F33567-81-C0067/0051  
filcnt: T1, H1, G1, R1  
ttlcls: UNCLASSIFIED  
doccls: UNCLASSIFIED  
doctyp: TEST DOCUMENT  
docttl: GEF->RAS Graphics Test
```

```
Found file: D003T001  
Extracting Text Header Records...  
Evaluating Text Header Records...
```

```
srcdocid: CALS_RAS_TEST2  
dstdocid: STPRO25.11  
txtfilid: W  
doccls: UNCLASSIFIED  
notes: NONE
```

```
Saving Text Header File: D003T001_HDR  
Saving Text Data File: D003T001_TXT
```

```
Found file: D003G002  
Extracting DTD Header Records...  
Evaluating DTD Header Records...
```

```
srcdocid: CALS_RAS_TEST2  
dstdocid: STPRO25.11  
notes: NONE
```

```
Saving DTD Header File: D003G002_HDR  
Saving DTD Data File: D003G002_DTD
```

```
Found file: D003H003  
Extracting Output Specification Header Records...  
Evaluating Output Specification Header Records...
```

```
srcdocid: CALS_RAS_TEST2  
dstdocid: STPRO25.11  
notes: NONE
```

```
Saving Output Specification Header File: D003H003_HDR  
Saving Output Specification Data File: D003H003_OS
```

Found file: D003R004  
Extracting Raster Header Records...  
Evaluating Raster Header Records...

srcdocid: CALS\_RAS\_TEST2  
dstdocid: STPRO25.11  
txtfilid: W  
figid: NONE  
srcgph: test2.ras  
doccls: UNCLASSIFIED  
rtype: 1  
rorient: 000,270  
rpelcnt: 002560,003584  
rdensy: 0300  
notes: NONE

Saving Raster Header File: D003R004\_HDR  
Saving Raster Data File: D003R004\_GR4

Evaluating numbering scheme...  
No errors were encountered during numbering scheme evaluation.  
Numbering scheme evaluation complete.

Checking file count...  
No errors were encountered during file count verification.  
File Count verification complete.

No errors were encountered in Document D003.

No errors were encountered in this File Set.

MIL-STD-1840A File Set Evaluation Complete.

---

## 9.4 Other Tape Reading Logs

```
/cals/caps/Bin/read1840A: --- Read declaration file 'D001      ' ---  
/cals/caps/Bin/read1840A: --- Read declaration file 'D002      ' ---  
/cals/caps/Bin/read1840A: --- Read declaration file 'D003      ' ---  
/cals/caps/Bin/read1840A: writing data file 'aftb9469/STPRO257/  
    W.T.sgm'.  
/cals/caps/Bin/read1840A: writing data file 'aftb9469/STPRO257/  
    CALSCGMTEST2.G.dtd'.  
/cals/caps/Bin/read1840A: writing data file 'aftb9469/STPRO257/  
    CALSCGMTEST2.H.out'.  
/cals/caps/Bin/read1840A: writing data file 'aftb9469/STPRO257/  
    allrealcgm.C.cgm'.  
/cals/caps/Bin/read1840A: writing data file 'aftb9469/STPRO257/  
    arcscgm.C.cgm'.  
/cals/caps/Bin/read1840A: writing data file 'aftb9469/STPRO257/  
    fillscgm.C.cgm'.  
/cals/caps/Bin/read1840A: writing data file 'aftb9469/STPRO257/  
    linescgm.C.cgm'.  
/cals/caps/Bin/read1840A: writing data file 'aftb9469/STPRO257/  
    textcgm.C.cgm'.  
-- declaration file indicates 1 files of type T  
-- declaration file indicates 1 files of type G  
-- declaration file indicates 1 files of type H  
-- declaration file indicates 0 files of type Q  
-- declaration file indicates 0 files of type R  
-- declaration file indicates 5 files of type C  
-- declaration file indicates 0 files of type X  
-- declaration file indicates 0 files of type P  
-- declaration file indicates 0 files of type Z  
/cals/caps/Bin/read1840A: writing data file 'aftb9469/STPRO259/  
    W.T.sgm'.  
/cals/caps/Bin/read1840A: writing data file 'aftb9469/STPRO259/  
    CALSIGESTEST2.G.dtd'.  
/cals/caps/Bin/read1840A: writing data file 'aftb9469/STPRO259/  
    CALSIGESTEST2.H.out'.  
/cals/caps/Bin/read1840A: writing data file 'aftb9469/STPRO259/  
    apple2digs.Q.igs'.  
/cals/caps/Bin/read1840A: writing data file 'aftb9469/STPRO259/  
    classic2digs.Q.igs'.  
/cals/caps/Bin/read1840A: writing data file 'aftb9469/STPRO259/  
    ientityigs.Q.igs'.  
/cals/caps/Bin/read1840A: writing data file 'aftb9469/STPRO259/  
    lgtableigs.Q.igs'.  
-- declaration file indicates 1 files of type T  
-- declaration file indicates 1 files of type G  
-- declaration file indicates 1 files of type H
```

```
-- declaration file indicates 4 files of type Q
-- declaration file indicates 0 files of type R
-- declaration file indicates 0 files of type C
-- declaration file indicates 0 files of type X
-- declaration file indicates 0 files of type P
-- declaration file indicates 0 files of type Z
/cals/caps/Bin/read1840A: writing data file 'aftb9469/STPRO2511/
W.T.sgm'.
/cals/caps/Bin/read1840A: writing data file 'aftb9469/STPRO2511/
CALSRATEST2.G.dtd'.
/cals/caps/Bin/read1840A: writing data file 'aftb9469/STPRO2511/
CALSRATEST2.H.out'.
/cals/caps/Bin/read1840A: writing data file 'aftb9469/STPRO2511/
test2ras.R.cci'.
-- declaration file indicates 1 files of type T
-- declaration file indicates 1 files of type G
-- declaration file indicates 1 files of type H
-- declaration file indicates 0 files of type Q
-- declaration file indicates 1 files of type R
-- declaration file indicates 0 files of type C
-- declaration file indicates 0 files of type X
-- declaration file indicates 0 files of type P
-- declaration file indicates 0 files of type Z
```

## 10. Appendix B - Detailed IGES Analysis

### 10.1 File D002Q006

#### 10.1.1 Parser/Verifier Log

```
*****
*****  IGES PARSER/VERIFIER  *****
*****      MARCH 1993      *****
*****  IGES Data Analysis  *****
*****      (708) 344-1815      *****
*****
```

Input file is q206.igs

Checking conformance to CALS Class I (MIL-D-28000A 2/10/92)

Today is June 13, 1994 8:17 AM

```
*****
*****      CHECK FILE SYNTAX      *****
*****
```

| Section   | Records             |
|-----------|---------------------|
| Start     | 11                  |
| Global    | 3                   |
| Directory | 400 ( 200 Entities) |
| Parameter | 389                 |
| Terminate | 1                   |

NITPICK 2489: Excess precision in real constant (16.00099754) for XS of D 3.  
NITPICK 2489: Excess precision in real constant (-0.12499999) for P1.X of D 7.  
NITPICK 2489: Messages regarding excess precision suppressed.

```
*****
*****      SUMMARY AND STATISTICS      *****
*****
```

\*\*\* File and Product Name Information \*\*\*

```
File name from sender      = 'ientity.igs'  
File creation Date.Time   = '940607.070004'  
Model change Date.Time    = ''  
Author                    = 'KASSEL'  
Department                = 'CALS TEST NETWORK'  
Product name from sender = 'ientity.igs'  
Destination product name = 'ientity.igs'
```

\*\*\* Parameter Delimiters \*\*\*

```
Delimiter = ','  
Terminator = ';'
```

\*\*\* Originating System Data \*\*\*

```
System ID                 = 'ITDS CONVERTER: GEF_IGES'  
Preprocessor version      = '1.0'  
Specification version     = 6 (IGES 4.0)
```

\*\*\* Precision levels \*\*\*

```
Integer bits = 32  
Floating point - Exponent = 38 Mantissa = 6  
Double precision - Exponent = 308 Mantissa = 15
```

\*\*\* Global Model Data \*\*\*

```
Model scale               = 1.0000E+00  
Unit flag                 = 1  
Units                     = 'IN'  
Line weights              = 8  
Maximum line thickness    = 1.600000E-02  
Minimum line thickness    = 2.000000E-03  
Granularity               = 1.000000E-03  
Maximum coordinate        = 1.650000E+01
```

Drafting standard applicable to original data is not specified.

\*\*\* Status Flag Summary \*\*\*

|                           |     |
|---------------------------|-----|
| Blank status: Visible     | 200 |
| Blanked                   | 0   |
| Independence: Independent | 185 |
| Physically Subordinate    | 12  |
| Logically Subordinate     | 3   |
| Totally Subordinate       | 0   |

|             |                       |     |
|-------------|-----------------------|-----|
| Entity use: | Geometry              | 67  |
|             | Annotation            | 132 |
|             | Definition            | 1   |
|             | Other                 | 0   |
|             | Logical/Positional    | 0   |
|             | 2D parametric         | 0   |
|             | Construction geometry | 0   |
|             | Not Specified         | 0   |

|            |                            |     |
|------------|----------------------------|-----|
| Hierarchy: | Structure DE applies       | 0   |
|            | Subordinate DE applies     | 200 |
|            | Hierarchy property applies | 0   |
|            | Not Specified              | 0   |

\*\*\* Entity Occurrence Counts \*\*\*

| Entity | Form | Level | Count | Type                                                           |
|--------|------|-------|-------|----------------------------------------------------------------|
| -----  | ---- | ----- | ----- | -----                                                          |
| 100    | 0    | 0     | 3     | Circular arc                                                   |
| 102    | 0    | 0     | 1     | Composite curve                                                |
| 104    | 1    | 0     | 2     | Conic arc - ellipse                                            |
| 104    | 2    | 0     | 1     | Conic arc - hyperbola                                          |
| 104    | 3    | 0     | 1     | Conic arc - parabola                                           |
| 106    | 11   | 0     | 1     | Copious data - Piecewise planar, linear string(2D linear path) |
| 106    | 63   | 0     | 1     | Simple closed planar curve                                     |
| 110    | 0    | 0     | 27    | Line                                                           |
| 112    | 0    | 0     | 2     | Parametric spline curve                                        |
| 124    | 0    | 0     | 12    | Transformation matrix                                          |
| 126    | 0    | 0     | 6     | Rational B-spline curve                                        |
| 212    | 0    | 0     | 129   | General note                                                   |
| 230    | 0    | 0     | 1     | Sectioned area (Standard Crosshatching)                        |
| 308    | 0    | 0     | 1     | Subfigure definition                                           |
| 404    | 0    | 0     | 1     | Drawing                                                        |
| 406    | 16   | 0     | 1     | Property - Drawing size                                        |
| 406    | 18   | 0     | 1     | Property - Intercharacter spacing                              |
| 408    | 0    | 0     | 8     | Single subfigure instance                                      |
| 410    | 0    | 0     | 1     | View - Orthographic parallel                                   |

\*\*\* Entity Count by Level \*\*\*

| Level | Count |
|-------|-------|
| 0     | 200   |

\*\*\* Labeling Information \*\*\*

0% of the entities are labeled.

Unlabeled 200

\*\*\* Line Fonts Used in Data \*\*\*

100 102 104 106 108 110 112 114

|   |   |   |   |   |    |   |   |              |
|---|---|---|---|---|----|---|---|--------------|
| - | - | - | - | - | -  | - | - | Undefined    |
| 3 | 1 | 4 | 2 | - | 27 | 2 | - | Solid        |
| - | - | - | - | - | -  | - | - | Dashed       |
| - | - | - | - | - | -  | - | - | Phantom      |
| - | - | - | - | - | -  | - | - | Center-line  |
| - | - | - | - | - | -  | - | - | Dotted       |
| - | - | - | - | - | -  | - | - | User defined |

116 118 120 122 124 125 126 128

|   |   |   |   |    |   |   |   |           |
|---|---|---|---|----|---|---|---|-----------|
| - | - | - | - | 12 | - | - | - | Undefined |
| - | - | - | - | -  | - | 6 | - | Solid     |
| - | - | - | - | -  | - | - | - | Dashed    |

<<<< PART OF LOG FILE REMOVED HERE >>>>

\*\*\* Line Widths Used in Data \*\*\*

| Weight    | Count | Width    |
|-----------|-------|----------|
| Defaulted | 200   | (0.0020) |

\*\*\* Colors Used in Data \*\*\*

|           |     |
|-----------|-----|
| Defaulted | 25  |
| Red       | 175 |

\*\*\*\*\*  
\*\*\*\*\* ENTITY ANALYSIS \*\*\*\*\*  
\*\*\*\*\*

\*\*\* Entity type: 100

\*\*\* Entity type: 102

\*\*\* Entity type: 104

WARNING 2265: Start point off conic by 1.349441E-03 at D 23.  
WARNING 2039: End point off conic by 1.435289E-03 at D 23.  
WARNING 2265: Start point off conic by 1.094899E-03 at D 27.  
WARNING 2039: End point off conic by 1.719588E-03 at D 27.

\*\*\* Entity type: 106

\*\*\* Entity type: 110

-- 27 lines averaging 7.155823E+00 units --

\*\*\* Entity type: 112

\*\*\* Entity type: 124

WARNING 2492: Undefined line font value (0) specified for D 21.  
WARNING 2492: Undefined line font value (0) specified for D 25.  
WARNING 2492: Undefined line font value (0) specified for D 29.  
WARNING 2492: Messages regarding undefined line font suppressed.  
12 transformation matrices, 4 non-zero translations.  
NOTE 2341: 4 matrices contain translation information.

\*\*\* Entity type: 126

\*\*\* Entity type: 212

129 text strings in data file.  
Average text aspect ratio in file is 0.9982937.  
Minimum text aspect ratio in file is 0.7978667.  
Maximum text aspect ratio in file is 1.4857143.

#### FONTS USED IN FILE

| FONT | COUNT | NAME |
|------|-------|------|
|------|-------|------|

|      |     |                     |
|------|-----|---------------------|
| 1    | 127 | Default ASCII Style |
| 1002 | 2   | Symbol Font 2       |

\*\*\* Entity type: 230

\*\*\* Entity type: 308

Subfigure name at D 19: 'subfig0'.  
Number of included entities = 6.

\*\*\* Entity type: 404

Drawing at D 5 contains 1 views.  
Drawing at D 5 contains 0 annotation entities.

\*\*\* Entity type: 406

\*\*\* Entity type: 408

|                         |                               |     |
|-------------------------|-------------------------------|-----|
| Subfigure instance at D | 363 references subfigure at D | 19. |
| Subfigure instance at D | 373 references subfigure at D | 19. |
| Subfigure instance at D | 377 references subfigure at D | 19. |
| Subfigure instance at D | 381 references subfigure at D | 19. |
| Subfigure instance at D | 385 references subfigure at D | 19. |
| Subfigure instance at D | 389 references subfigure at D | 19. |
| Subfigure instance at D | 393 references subfigure at D | 19. |
| Subfigure instance at D | 397 references subfigure at D | 19. |

\*\*\* Entity type: 410

Scale of view at D 1 is 1.000000E+00.  
Orthographic View entity at D 1 has 0 clipping planes specified.  
XMIN = Not Set XMAX = Not Set  
YMIN = Not Set YMAX = Not Set  
ZMIN = Not Set ZMAX = Not Set

\*\*\* Message Summary \*\*\*

2015: 4 Mathematically incorrect definitions.  
2038: 145 Invalid Line font values.

\*\*\* Error Summary \*\*\*

0 fatal errors  
0 severe errors  
0 errors  
149 warnings  
0 cautions  
914 nitpicks  
1 notes

\*\*\* End of Analysis of q206.igs \*\*\*

## 10.1.2 Parser Log - AutoCAD R12

Title: IGESIN Journal (v5.1 Nov 05 1992)

=====

File: C:/TMP/Q206.xli

Date: Mon, Jun 13, 1994

Time: 13:02:55

=====

EVALUATION VERSION -- NOT FOR RESALE

Translator S/N: 117-10075750

Translating from IGES file: C:/TMP/Q206.IGS

to AutoCAD Drawing: C:\Q206.dwg

=====

Options obtained from: default settings

Curves Approximated to Tolerance of 0.01

Surfaces Approximated to Tolerance of 0.01

Text Font/Style mapping:

| IGES Text font | Style Name | ACAD Font |
|----------------|------------|-----------|
| 0              | SYMBOL0    | iges0     |
| 1              | STANDARD   | txt       |
| 2              | LEROY      | txt       |
| 3              | FUTURA     | txt       |
| 6              | COMP80     | txt       |
| 12             | GOTHICE    | gothice   |
| 13             | GOTHICI    | gothici   |
| 14             | ROMANS     | romans    |
| 17             | ROMANT     | romant    |
| 18             | ROMAND     | romand    |
| 19             | OCR        | txt       |
| 1001           | SYMBOL1    | iges1001  |
| 1002           | SYMBOL2    | iges1002  |
| 1003           | SYMBOL3    | iges1003  |
| 2001           | KANJI      | bigfont   |

IGES Linefont/AutoCAD Linetype mapping

| IGES Line Font | AutoCAD linetype | Shape file |
|----------------|------------------|------------|
| 0              | BYLAYER          |            |
| 1              | CONTINUOUS       |            |
| 2              | DASHED           | acad.lin   |
| 3              | PHANTOM          | acad.lin   |
| 4              | CENTER           | acad.lin   |
| 5              | DOT              | acad.lin   |

Parse phase

\*\*\* Warning (IEVM\_BAD\_START\_POINT\_104) \*\*\*  
(DE 23, TF 104:2) Entity's start point not on the conic. Value found was  
-5.0045203e-001, 2.1541785e-001.

Action taken: Start point moved 1.3494413e-003 units, from -5.0045203e-001,  
2.1541785e-001 to -5.0045203e-001, 2.1676729e-001.

<<<< PART OF LOG FILE REMOVED HERE >>>>

\*\*\* Warning (IEVM\_RADII\_NOT\_EQUAL\_100) \*\*\*  
(DE 39, TF 100:0) Entity's radii are not equal. Start point radius:  
5.0142377e-001. Terminate point radius: 5.0096873e-001.

Action taken: Start point moved 2.2751903e-004 units from 1.4990643e+000,  
8.9985771e+000 to 1.4990647e+000, 8.9988046e+000. Terminate point moved  
2.2751903e-004 units from 9.9903320e-001, 9.4986076e+000 to 9.9880568e-001,  
9.4986070e+000.

\*\*\* Warning (IEVM\_BAD\_CONTINUITY\_112) \*\*\*  
(DE 369, TF 112:0) Entity's Degree of Continuity, 0, is incorrectly specified.  
Degree of Continuity calculated to be 1.

Action taken: Degree of Continuity set to 1.

=====

Start Section:

CONFORMANCE:

MIL-D-28000 Amendment1, 20 December 1988  
Technical Illustration Class I Subset

ILLUSTRATION IDENTIFIER:

ientity.igs

|     |          |      |
|-----|----------|------|
| GEF | 0.499002 | 0.5  |
| GEF | 16.5     | 10.5 |

Global Section:

Parameter Delimiter: ,  
Record Delimiter: ;  
Sending Product ID: ientity.igs  
File Name: ientity.igs  
System ID: ITDS CONVERTER: GEF\_IGES  
Preprocessor Version: 1.0  
Size of Integer: 32

---

Sgl. Precision Mag: 38  
 Sgl. Precision Sig: 6  
 Dbl. Precision Mag: 308  
 Dbl. Precision Sig: 15  
 Receiving Product ID: identity.igs  
 Model Space Scale: 1.000000  
 Unit Flag: 1  
 Unit String: IN  
 # of Line Weights: 8  
 Maximum Line Width: 0.016000  
 Creation Date: 06/07/94 07:00:04  
 Minimum Resolution: 0.001000  
 Maximum Coordinate: 16.500000  
 Author: KASSEL  
 Organization: CALS TEST NETWORK  
 IGES Version Number: 6  
 Drafting Standard: 0

Entity Summary:

| Type  | Form | Description                       | Count |
|-------|------|-----------------------------------|-------|
| 100   | 0    | Circular Arc                      | 3     |
| 102   | 0    | Composite Curve                   | 1     |
| 104   | 1    | Ellipse                           | 2     |
| 104   | 2    | Hyperbola                         | 1     |
| 104   | 3    | Parabola                          | 1     |
| 106   | 11   | Planar Piecewise Linear Curve     | 1     |
| 106   | 63   | Simple Closed Planar Curve        | 1     |
| 110   | 0    | Line                              | 27    |
| 112   | 0    | Parametric Spline Curve           | 2     |
| 124   | 0    | Transformation Matrix             | 12    |
| 126   | 0    | Rational B-Spline Curve (General) | 6     |
| 212   | 0    | General Note (Simple)             | 129   |
| 230   | 0    | Section Area (Standard Fill)      | 1     |
| 308   | 0    | Subfigure Definition              | 1     |
| 404   | 0    | Drawing (form 0)                  | 1     |
| 406   | 16   | Property (Drawing Size)           | 1     |
| 406   | 18   | Property (Int-character Spacing)  | 1     |
| 408   | 0    | Subfigure Instance                | 8     |
| 410   | 0    | View                              | 1     |
| Total |      |                                   | 200   |

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Translation phase  
Drawing Entity (404 Form 0) at DE 5, with  
name = ,  
size = 16.000998, 10.000000,  
units = IN,  
was processed in the AutoCAD drawing file: C:\Q206.dwg

\*\*\* Warning (ACAD\_NEW\_VIEW\_VOLUME\_GENERATED) \*\*\*  
( DE: 1 TF: 410:0 )  
A new view volume has been generated for the view with:  
XMIN (-1.387808), XMAX (18.386810),  
YMIN (-1.386810), YMAX (12.385481),  
ZMIN (-1.886810), ZMAX (1.886810).

#### IGES Entity Summary

| Type   | Form | Description                       | Count | Processed | Errors |
|--------|------|-----------------------------------|-------|-----------|--------|
| 100    | 0    | Circular Arc                      | 3     | 3         | 0      |
| 102    | 0    | Composite Curve                   | 1     | 1         | 0      |
| 104    | 1    | Ellipse                           | 2     | 2         | 0      |
| 104    | 2    | Hyperbola                         | 1     | 1         | 0      |
| 104    | 3    | Parabola                          | 1     | 1         | 0      |
| 106    | 11   | Planar Piecewise Linear Curve     | 1     | 1         | 0      |
| 106    | 63   | Simple Closed Planar Curve        | 1     | 1         | 0      |
| 110    | 0    | Line                              | 23    | 23        | 0      |
| 112    | 0    | Parametric Spline Curve           | 2     | 2         | 0      |
| 126    | 0    | Rational B-Spline Curve (General) | 6     | 6         | 0      |
| 212    | 0    | General Note (Simple)             | 129   | 129       | 0      |
| 230    | 0    | Section Area (Standard Fill)      | 1     | 1         | 0      |
| 308    | 0    | Subfigure Definition              | 1     | 1         | 0      |
| 404    | 0    | Drawing (form 0)                  | 1     | 1         | 0      |
| 406    | 16   | Property (Drawing Size)           | 1     | 1         | 0      |
| 408    | 0    | Subfigure Instance                | 8     | 8         | 0      |
| 410    | 0    | View                              | 1     | 1         | 0      |
| <hr/>  |      |                                   |       |           |        |
| Totals |      |                                   | 183   | 183       | 0      |

#### Unsupported IGES Entity Summary

| Type  | Form | Description                      | Count |
|-------|------|----------------------------------|-------|
| 406   | 18   | Property (Int-character Spacing) | 1     |
| Total |      |                                  | 1     |

AutoCAD Entity Summary

| Entity        | Created    | Errors   |
|---------------|------------|----------|
| LINE          | 31         | 0        |
| CIRCLE        | 1          | 0        |
| TEXT          | 134        | 0        |
| ARC           | 2          | 0        |
| INSERT        | 10         | 0        |
| POLYLINE      | 14         | 0        |
| BLOCK         | 3          | 0        |
| <b>Totals</b> | <b>195</b> | <b>0</b> |

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Error Summary:

The following message was issued 1 time(s)  
Entity's radii are not equal. Start point radius: %.7e. Terminate point  
radius: %.7e.

The following message was issued 4 time(s)  
Entity's start point not on the conic. Value found was %.7e, %.7e.

The following message was issued 4 time(s)  
Entity's End Point not on the conic. Value found was %.7e, %.7e.

The following message was issued 1 time(s)  
Entity's Degree of Continuity, %d, is incorrectly specified. Degree of  
Continuity calculated to be %d.

The following message was issued 1 time(s)  
A new view volume has been generated for the view with:  
XMIN (%lf), XMAX (%lf),  
YMIN (%lf), YMAX (%lf),  
ZMIN (%lf), ZMAX (%lf).

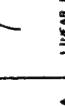
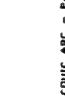
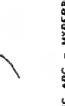
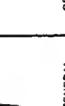
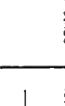
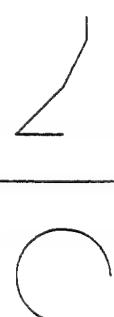
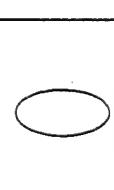
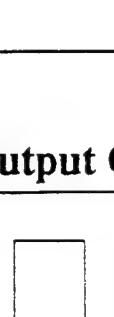
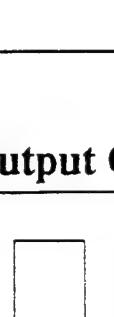
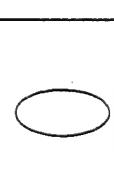
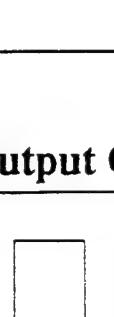
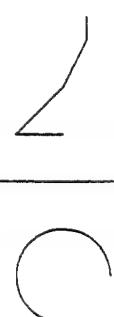
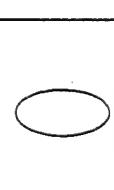
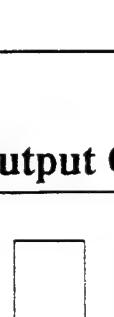
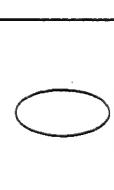
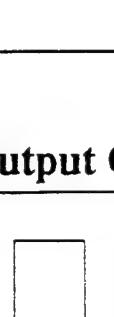
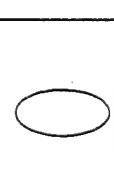
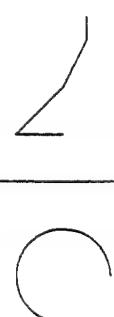
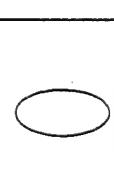
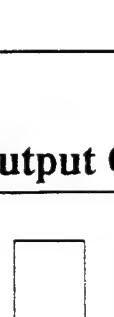
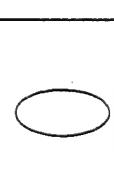
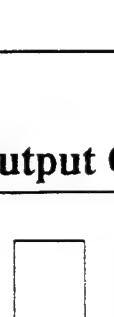
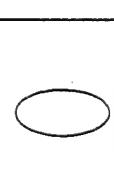
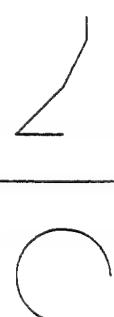
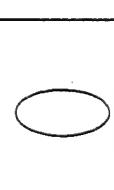
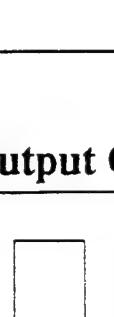
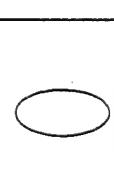
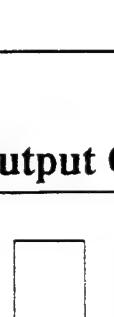
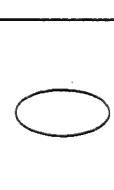
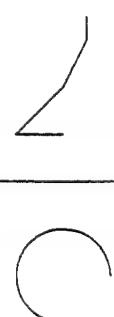
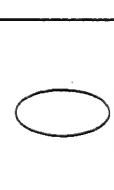
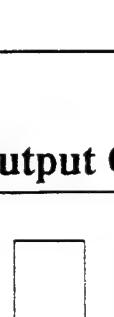
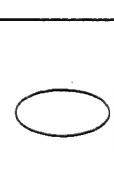
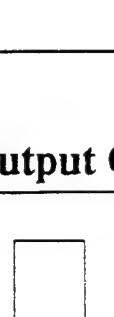
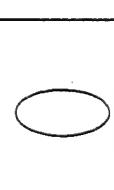
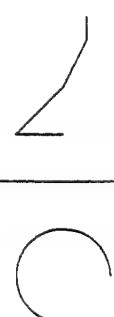
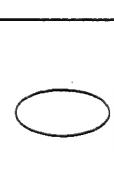
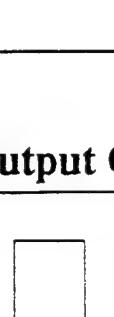
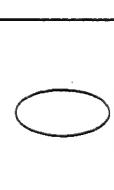
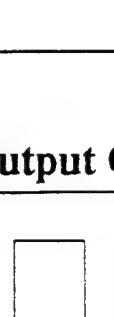
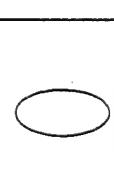
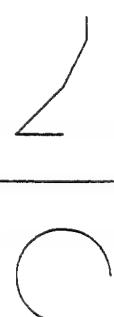
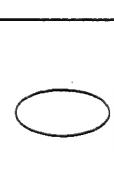
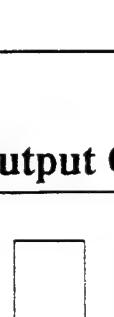
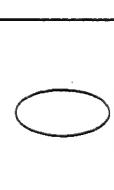
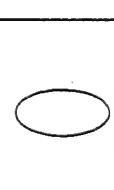
Status: 0  
Warning: 11  
Error: 0  
Fatal: 0

Elapsed Time:

Processor: 00:00:14  
Clock: 00:00:14

---

### 10.1.3 Output AutoCAD R12

|                                                                                      |                                                                                      |                                                                                      |                                                                                      |                                                                                      |                                                                                      |                                                                                      |                                                                                      |
|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|     |     |     |   |   |   |   |   |
| CIRCULAR ARC (100)                                                                   | COMPOSITE CURVE (100)                                                                | CUBIC ARC - GENERAL (100 FORM 0)                                                     | CUBIC ARC - HYPERBOLA (100 FORM 2)                                                   | CUBIC ARC - PARABOLA (100 FORM 3)                                                    | LINAR PLANE CURVE (100 FORM 11)                                                      | LINAR PLANE CURVE (100 FORM 11)                                                      | SIMPLE CLOSED AREA (100 FORM 63)                                                     |
|   |   |   |   |   |   |   |   |
| LIN. (100)                                                                           | PARAMETRIC SPLINE CURVE (100)                                                        | RATIONAL B-SPLINE CURVE (100 FORM 6)                                                 | RATIONAL B-SPLINE CURVE (100 FORM 10)                                                | RATIONAL B-SPLINE CURVE (100 FORM 14)                                                | RATIONAL B-SPLINE CURVE (100 FORM 18)                                                | RATIONAL B-SPLINE CURVE (100 FORM 22)                                                | RATIONAL B-SPLINE CURVE (100 FORM 26)                                                |
|   |   |   |   |   |   |   |   |
| TRANSFORMATION MATRIX (100 FORM 0)                                                   |
|   |   |   |   |   |   |   |   |
| SIMPLE                                                                               | DUAL STACK                                                                           |
|   |   |   |   |   |   |   |   |
| GENERAL NOTE - SIMPLE (100 FORM 0)                                                   |
|   |   |   |   |   |   |   |   |
| FRACTION                                                                             |
|   |   |   |   |   |   |   |  |
| M STACK RIGHT                                                                        |
|  |  |  |  |  |  |  |  |
| M STACK CENTER                                                                       |
|  |  |  |  |  |  |  |  |
| NOTE - M-STACK<br>CENT JUST (100 FORM 0)                                             |
|  |  |  |  |  |  |  |  |
| FIGURE 1                                                                             | FIGURE 2                                                                             | FIGURE 3                                                                             | FIGURE 4                                                                             | FIGURE 5                                                                             | FIGURE 6                                                                             | FIGURE 7                                                                             | FIGURE 8                                                                             |
|  |  |  |  |  |  |  |  |
| FIGURE 9                                                                             | FIGURE 10                                                                            | FIGURE 11                                                                            | FIGURE 12                                                                            | FIGURE 13                                                                            | FIGURE 14                                                                            | FIGURE 15                                                                            | FIGURE 16                                                                            |
|  |  |  |  |  |  |  |  |
| FIGURE 17                                                                            | FIGURE 18                                                                            | FIGURE 19                                                                            | FIGURE 20                                                                            | FIGURE 21                                                                            | FIGURE 22                                                                            | FIGURE 23                                                                            | FIGURE 24                                                                            |
|  |  |  |  |  |  |  |  |
| FIGURE 25                                                                            | FIGURE 26                                                                            | FIGURE 27                                                                            | FIGURE 28                                                                            | FIGURE 29                                                                            | FIGURE 30                                                                            | FIGURE 31                                                                            | FIGURE 32                                                                            |
|  |  |  |  |  |  |  |  |
| FIGURE 33                                                                            | FIGURE 34                                                                            | FIGURE 35                                                                            | FIGURE 36                                                                            | FIGURE 37                                                                            | FIGURE 38                                                                            | FIGURE 39                                                                            | FIGURE 40                                                                            |
|  |  |  |  |  |  |  |  |
| FIGURE 41                                                                            | FIGURE 42                                                                            | FIGURE 43                                                                            | FIGURE 44                                                                            | FIGURE 45                                                                            | FIGURE 46                                                                            | FIGURE 47                                                                            | FIGURE 48                                                                            |
|  |  |  |  |  |  |  |  |
| FIGURE 49                                                                            | FIGURE 50                                                                            | FIGURE 51                                                                            | FIGURE 52                                                                            | FIGURE 53                                                                            | FIGURE 54                                                                            | FIGURE 55                                                                            | FIGURE 56                                                                            |
|  |  |  |  |  |  |  |  |
| FIGURE 57                                                                            | FIGURE 58                                                                            | FIGURE 59                                                                            | FIGURE 60                                                                            | FIGURE 61                                                                            | FIGURE 62                                                                            | FIGURE 63                                                                            | FIGURE 64                                                                            |
|  |  |  |  |  |  |  |  |
| FIGURE 65                                                                            | FIGURE 66                                                                            | FIGURE 67                                                                            | FIGURE 68                                                                            | FIGURE 69                                                                            | FIGURE 70                                                                            | FIGURE 71                                                                            | FIGURE 72                                                                            |
|  |  |  |  |  |  |  |  |
| FIGURE 73                                                                            | FIGURE 74                                                                            | FIGURE 75                                                                            | FIGURE 76                                                                            | FIGURE 77                                                                            | FIGURE 78                                                                            | FIGURE 79                                                                            | FIGURE 80                                                                            |
|  |  |  |  |  |  |  |  |
| FIGURE 81                                                                            | FIGURE 82                                                                            | FIGURE 83                                                                            | FIGURE 84                                                                            | FIGURE 85                                                                            | FIGURE 86                                                                            | FIGURE 87                                                                            | FIGURE 88                                                                            |
|  |  |  |  |  |  |  |  |
| FIGURE 89                                                                            | FIGURE 90                                                                            | FIGURE 91                                                                            | FIGURE 92                                                                            | FIGURE 93                                                                            | FIGURE 94                                                                            | FIGURE 95                                                                            | FIGURE 96                                                                            |
|  |  |  |  |  |  |  |  |
| FIGURE 97                                                                            | FIGURE 98                                                                            | FIGURE 99                                                                            | FIGURE 100                                                                           | FIGURE 101                                                                           | FIGURE 102                                                                           | FIGURE 103                                                                           | FIGURE 104                                                                           |
|  |  |  |  |  |  |  |  |
| FIGURE 105                                                                           | FIGURE 106                                                                           | FIGURE 107                                                                           | FIGURE 108                                                                           | FIGURE 109                                                                           | FIGURE 110                                                                           | FIGURE 111                                                                           | FIGURE 112                                                                           |
|  |  |  |  |  |  |  |  |
| FIGURE 113                                                                           | FIGURE 114                                                                           | FIGURE 115                                                                           | FIGURE 116                                                                           | FIGURE 117                                                                           | FIGURE 118                                                                           | FIGURE 119                                                                           | FIGURE 120                                                                           |
|  |  |  |  |  |  |  |  |
| FIGURE 121                                                                           | FIGURE 122                                                                           | FIGURE 123                                                                           | FIGURE 124                                                                           | FIGURE 125                                                                           | FIGURE 126                                                                           | FIGURE 127                                                                           | FIGURE 128                                                                           |
|  |  |  |  |  |  |  |  |
| FIGURE 129                                                                           | FIGURE 130                                                                           | FIGURE 131                                                                           | FIGURE 132                                                                           | FIGURE 133                                                                           | FIGURE 134                                                                           | FIGURE 135                                                                           | FIGURE 136                                                                           |
|  |  |  |  |  |  |  |  |
| FIGURE 137                                                                           | FIGURE 138                                                                           | FIGURE 139                                                                           | FIGURE 140                                                                           | FIGURE 141                                                                           | FIGURE 142                                                                           | FIGURE 143                                                                           | FIGURE 144                                                                           |
|  |  |  |  |  |  |  |  |
| FIGURE 145                                                                           | FIGURE 146                                                                           | FIGURE 147                                                                           | FIGURE 148                                                                           | FIGURE 149                                                                           | FIGURE 150                                                                           | FIGURE 151                                                                           | FIGURE 152                                                                           |
|  |  |  |  |  |  |  |  |
| FIGURE 153                                                                           | FIGURE 154                                                                           | FIGURE 155                                                                           | FIGURE 156                                                                           | FIGURE 157                                                                           | FIGURE 158                                                                           | FIGURE 159                                                                           | FIGURE 160                                                                           |
|  |  |  |  |  |  |  |  |
| FIGURE 161                                                                           | FIGURE 162                                                                           | FIGURE 163                                                                           | FIGURE 164                                                                           | FIGURE 165                                                                           | FIGURE 166                                                                           | FIGURE 167                                                                           | FIGURE 168                                                                           |
|  |  |  |  |  |  |  |  |
| FIGURE 169                                                                           | FIGURE 170                                                                           | FIGURE 171                                                                           | FIGURE 172                                                                           | FIGURE 173                                                                           | FIGURE 174                                                                           | FIGURE 175                                                                           | FIGURE 176                                                                           |
|  |  |  | CIRCULAR ARC (100)                |  | COMPOSITE CURVE (102)                |  | CUBIC ARC - ELLIPSE (104 FORM 0)     |  | CUBIC ARC - IMPERIAL (104 FORM 1)    |    | CUBIC ARC - PARABOL (104 FORM 3) |  | LINEAR FLANGE CURVE (105 FORM 1)           |  | RATIONAL B-SPLINE CURVE (106 FORM 1) |    | RATIONAL B-SPLINE CURVE (106 FORM 3) |  |
|  | PARAMETRIC SPINE LINE CURVE (112) |  | TRANSPOSITION MATRIX 0-1124 (FORM 0) |  | RATIONAL B-SPLINE CURVE (106 FORM 1) |  | RATIONAL B-SPLINE CURVE (106 FORM 3) |  | NOTE - RATIONAL SPINE            |  | NOTE - UNROLLED REPORT CHANGE (212 FORM 2) |    | NOTE - RATIONAL SPINE                |  | NOTE - RATIONAL SPINE                |  |
|  | SIMPLE STACK                      |  | DUAL STACK                           |  | IN DED                               |  | SURF                                 |  | IN DED                           |  | IN DED                                     |    | IN DED                               |  | IN DED                               |  |
|  | IN NOTE - RATIONAL SPINE          |  | IN NOTE - DED                        |  | IN NOTE - DED                        |  | IN SURF                              |  | IN SURF                          |  | IN SURF                                    |    | IN SURF                              |  | IN SURF                              |  |
|  | H STACK CENTER                    |  | H STACK RIGHT                        |  | IN DED                               |  | DUAL - 10<br>STACK 0.0               |  | IN DED                           |  | IN DED                                     |    | IN DED                               |  | IN DED                               |  |
|  | SINGLE SURFACE INSTANCE           |  | IN NOTE - DED                        |  | IN NOTE - DED                        |  | IN NOTE - DED                        |  | IN NOTE - DED                    |  | IN NOTE - DED                              |    | IN NOTE - DED                        |  | IN NOTE - DED                        |  |
|  | RECTANGULAR SPINE CURVE (1122)    |  | CIRCULAR SPINE INSTANCE (104)        |  | CIRCULAR SPINE INSTANCE (104)        |  | CIRCULAR SPINE INSTANCE (104)        |  | CIRCULAR SPINE INSTANCE (104)    |  | CIRCULAR SPINE INSTANCE (104)              |    | CIRCULAR SPINE INSTANCE (104)        |  | CIRCULAR SPINE INSTANCE (104)        |  |
|                                                                                     |                                   |                                                                                     |                                      |                                                                                   |                                      |                                                                                   |                                      |                                                                                     |                                  |                                                                                   |                                            |                                                                                     |                                      |                                                                                     |                                      |  |
|                                                                                     |                                   |                                                                                     |                                      |                                                                                   |                                      |                                                                                   |                                      |                                                                                     |                                  |                                                                                   |                                            |                                                                                     |                                      |                                                                                     |                                      |  |

### 10.1.5 Output CADLeaf

| GENERAL ARC (100) | COMPOSITE CURVE (101) | COMPOUND ARC - GENERAL (102 FORM 0) | COMPOUND ARC - ELLIPTIC (103 FORM 1) | COMPOUND ARC - HYPERBOLA (104 FORM 0) | COMPOUND ARC - PARABOLA (105 FORM 0) | LINEAR PLANKS WAVE (106 FORM 1) | SIMPLE CLOSED AR (107 FORM 0) |
|-------------------|-----------------------|-------------------------------------|--------------------------------------|---------------------------------------|--------------------------------------|---------------------------------|-------------------------------|
|                   |                       |                                     |                                      |                                       |                                      |                                 |                               |
|                   |                       |                                     |                                      |                                       |                                      |                                 |                               |
|                   |                       |                                     |                                      |                                       |                                      |                                 |                               |
|                   |                       |                                     |                                      |                                       |                                      |                                 |                               |
|                   |                       |                                     |                                      |                                       |                                      |                                 |                               |
|                   |                       |                                     |                                      |                                       |                                      |                                 |                               |
|                   |                       |                                     |                                      |                                       |                                      |                                 |                               |

### 10.1.6 Output CALSView

|  |  |  |  |  |  |  |                                                                                       |
|--|--|--|--|--|--|--|---------------------------------------------------------------------------------------|
|  |  |  |  |  |  |  |                                                                                       |
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|  |  |  |  |  |  |  |                                                                                       |
|  |  |  |  |  |  |  | <p>CALS TEST NETWORK<br/>MIL-D-2800<br/>CLASS:<br/>REFERENCE DRAWING<br/>IDENTITY</p> |

## 10.1.7 Output IGESView

|                                           |                                            |                                       |                                               |                                            |                                              |                                     |                                                                |
|-------------------------------------------|--------------------------------------------|---------------------------------------|-----------------------------------------------|--------------------------------------------|----------------------------------------------|-------------------------------------|----------------------------------------------------------------|
|                                           |                                            |                                       |                                               |                                            |                                              |                                     |                                                                |
| CIRCULAR ARC (108)                        | COMPOSITE CURVE (102)                      | CONIC ARC - GENERAL (104 FORM 8)      | CONIC ARC - ELLIPSE (104 FORM 0)              | CONIC ARC - HYPERBOLA (104 FORM 2)         | CONIC ARC - PARABOLA (104 FORM 3)            | LINEAR PLANAR CURVE (108 FORM 11)   | SIMPLE CLOSED AREA (106 FORM 65)                               |
|                                           |                                            |                                       |                                               |                                            |                                              |                                     |                                                                |
| RATIONAL B-SPLINE CURVE (126 FORM 5)      | GENERAL NOTE - SIMPLE (212 FORM 8)         | NOTE - DUAL STACK (212 FORM 1)        | NOTE - EMBEDDED FONT CHANGE (212 FORM 2)      | NOTE - SUPERSCRIPT (212 FORM 3)            | NOTE - SUBSCRIPT (212 FORM 4)                | NOTE - SUPER/SUBSCRIPT (212 FORM 5) | NOTE - MULTI STACK LEFT JUST (212 FORM 1)                      |
| M STACK CENTER                            | M STACK RIGHT                              | S <sub>FRACTION</sub>                 | DUAL <sup>TO</sup> <sub>P</sub> STACK BOT TOM | IMBEDDED + FR ACT                          | FR <sup>O</sup> <sub>P</sub> SUP SUB BOT TOM | SECTIONED AREA (236)                | SPACING (488 FORM 18)                                          |
| NOTE - MULTI STACK LEFT JUST (212 FORM 7) | NOTE - MULTI STACK RIGHT JUST (212 FORM 8) | NOTE - SIMPLE FRACTION (212 FORM 105) | NOTE - DUAL STACK FRACTION (212 FORM 107)     | NOTE - FONT/DOUBLE FRACTION (212 FORM 102) | NOTE - SUPER/SUB FRACTION (212 FORM 105)     |                                     | CALS TEST NETWO MIL-D-28668 CLASS 1 REFERENCE DRAWING I-ENTITY |
|                                           |                                            |                                       |                                               |                                            |                                              |                                     |                                                                |
| SYMBOL SUBROUTINE INSTANCE (485)          | RECTANGULAR SUBROUTINE INSTANCE (412)      | CIRCULAR SUBROUTINE INSTANCE (414)    |                                               |                                            |                                              |                                     |                                                                |

### 10.1.8 Output IGESWorks

## 10.1.9 Output IslandDraw

| CIRCULAR ARC (100)                                  | COMPOSITE CURVE (102)                      | CONIC ARC - GENERAL (104 FORM 0)       | CONIC ARC - ELLIPSE (104 FORM 1)                                   | CONIC ARC - HYPERBOLA (104 FORM 2)                                  | CONIC ARC - PARABOLA (104 FORM 3)                               | LINEAR PLANAR CURVE (106 FORM 11)                   | SIMPLE CLOSED (106 FORM 6)                                           |
|-----------------------------------------------------|--------------------------------------------|----------------------------------------|--------------------------------------------------------------------|---------------------------------------------------------------------|-----------------------------------------------------------------|-----------------------------------------------------|----------------------------------------------------------------------|
| LINE (110)                                          | PARAMETRIC SPLINE CURVE (112)              | TRANSFORMATION MATRIX D=1 (124 FORM 0) | RATIONAL B-SPLINE CURVE (126 FORM 0)                               | RATIONAL B-SPLINE CURVE LINE (126 FORM 1)                           | RATIONAL B-SPLINE CURVE CIRCULAR ARC (126 FORM 2)               | RATIONAL B-SPLINE CURVE ELLIPTICAL ARC (126 FORM 3) | RATIONAL B-SPLINE CURVE PARABOLIC ARC (126 FORM 4)                   |
| RATIONAL B-SPLINE CURVE HYPERBOLIC ARC (126 FORM 5) | SIMPLE                                     | DUAL STACK                             | IM+DED                                                             | S <sub>SUPER</sub>                                                  | S <sub>SUB</sub>                                                | S <sub>SUPER</sub> SUB                              | M STACK LEFT                                                         |
| NOTE - MULTI STACK CENT JUST (212 FORM 7)           | NOTE - MULTI STACK RIGHT JUST (212 FORM 6) | NOTE - SIMPLE FRACTION (212 FORM 100)  | NOTE - DUAL STACK (212 FORM 1)                                     | NOTE - IMBEDDED FONT CHANGE (212 FORM 2)                            | NOTE - SUPERSCRIPT (212 FORM 3)                                 | NOTE - SUBSCRIPT (212 FORM 4)                       | NOTE - SUPER/SUB SCRIPT (212 FORM 5)                                 |
| M STACK CENTER                                      | M STACK RIGHT                              | S <sub>FRAC</sub> TION                 | DUAL <sub>P</sub> <sup>T</sup> STACK <sub>BOT</sub> <sup>TOP</sup> | IM <sub>DED</sub> <sup>BED</sup> ≠ FR <sub>ACT</sub> <sup>ION</sup> | FR <sub>SUP</sub> <sup>SUB</sup> BO <sub>OM</sub> <sup>TT</sup> | SECTIONED AREA (230)                                | SPACING                                                              |
| SINGLE SUBFIGURE INSTANCE (406)                     | RECTANGULAR SUBFIGURE INSTANCE (412)       | CIRCULAR SUBFIGURE INSTANCE (414)      |                                                                    |                                                                     |                                                                 |                                                     | CALS TEST NET MIL-D-290C CLASS 1 REFERENCE DRAW ENTITY (406 FORM 11) |

### 10.1.10 Output Preview

|                                               |  |  |  |  |  |
|-----------------------------------------------|--|--|--|--|--|
|                                               |  |  |  |  |  |
| <b>CIRCULAR ARC 11001</b><br>                 |  |  |  |  |  |
| <b>LINE 11101</b><br>                         |  |  |  |  |  |
| <b>COMPOSITE CURVE 11001</b><br>              |  |  |  |  |  |
| <b>CONIC ARC - CENTRAL 1104 FORM 01</b><br>   |  |  |  |  |  |
| <b>LINEAR PLANAR CURVE 1108 FORM 11</b><br>   |  |  |  |  |  |
| <b>CONIC ARC - FLIPPABLE 1104 FORM 01</b><br> |  |  |  |  |  |
| <b>CONIC ARC - HYPERBOLA 1105 FORM 01</b><br> |  |  |  |  |  |
| <b>CONIC ARC - PARABOLA 1106 FORM 01</b><br>  |  |  |  |  |  |
| <b>CONIC ARC - PARABOLIC 1107 FORM 01</b><br> |  |  |  |  |  |
| <b>CONIC ARC - PARABOLIC 1108 FORM 01</b><br> |  |  |  |  |  |
| <b>LINEAR PLANAR CURVE 1108 FORM 11</b><br>   |  |  |  |  |  |
|                                               |  |  |  |  |  |
|                                               |  |  |  |  |  |
|                                               |  |  |  |  |  |
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|                                               |  |  |  |  |  |

## 11. Appendix C - Detailed SGML Analysis

### 11.1 Exoterica XGMLNormalizer Parser

C:\XGML\XGMLNORM.EXE --

Warning on line 730 in file 9469.dtd:

An element with mixed content does not permit data characters  
everywhere.

Spaces and line breaks in element 'NOTICE' may be treated as data  
characters, forcing insertion of markup.

C:\XGML\XGMLNORM.EXE --

Warning on line 817 in file 9469.dtd:

An element with mixed content does not permit data characters  
everywhere.

Spaces and line breaks in element 'INTERNATLSTD' may be treated as data  
characters, forcing insertion of markup.

C:\XGML\XGMLNORM.EXE --

Warning on line 856 in file 9469.dtd:

An element with mixed content does not permit data characters  
everywhere.

Spaces and line breaks in element 'HOWTOUSE' may be treated as data  
characters, forcing insertion of markup.

C:\XGML\XGMLNORM.EXE --

Warning on line 1366 in file 9469.dtd:

An element with mixed content does not permit data characters  
everywhere.

Spaces and line breaks in element 'CALLOUT' may be treated as data  
characters, forcing insertion of markup.

C:\XGML\XGMLNORM.EXE --

Warning on line 1548 in file 9469.dtd:

An element with mixed content does not permit data characters  
everywhere.

Spaces and line breaks in element 'ENTRY' may be treated as data  
characters, forcing insertion of markup.

C:\XGML\XGMLNORM.EXE --

Warning on line 1587 in file 9469.dtd:

An element with mixed content does not permit data characters  
everywhere.

Spaces and line breaks in element 'FTNOTE' may be treated as data  
characters, forcing insertion of markup.

---

## 11.2 Exoterica Validator ex1

```
<!-- **Warning** in "\xgml\9469.dtd", line 522:  
  An EMPTY element must have a start tag and must not have an end tag.  
  Therefore, it is inappropriate to specify an omissible start tag or an  
  inomissible end tag in its declaration.  
  The element is "DATABASE".  
<!ELEMENT database      --      EMPTY      >  
                                ^^^^^^  
-->  
<!-- **Warning** in "\xgml\9469.dtd", line 604:  
  An EMPTY element must have a start tag and must not have an end tag.  
  Therefore, it is inappropriate to specify an omissible start tag or an  
  inomissible end tag in its declaration.  
  The element is "MEDIUM".  
<!ELEMENT medium      --      EMPTY>  
                                ^^^^^^  
-->  
<!-- **Warning** in "\xgml\9469.dtd", line 730:  
  An element with mixed content should permit data characters ("#PCDATA")  
  everywhere.  
  The element being declared is "NOTICE".  
<!ELEMENT notice      - o      (para+ | %paracon;)      +(table) >  
                                /\  
-->  
<!-- **Warning** in "\xgml\9469.dtd", line 818:  
  An element with mixed content should permit data characters ("#PCDATA")  
  everywhere.  
  The element being declared is "INTERNATLSTD".  
                                %paracon;)      >  
                                /\  
-->  
<!-- **Warning** in "\xgml\9469.dtd", line 857:  
  An element with mixed content should permit data characters ("#PCDATA")  
  everywhere.  
  The element being declared is "HOWTOUSE".  
                                %paracon;)      >  
                                /\  
-->  
<!-- **Warning** in "\xgml\9469.dtd", line 1366:  
  An element with mixed content should permit data characters ("#PCDATA")  
  everywhere.  
  The element being declared is "CALLOUT".  
<!ELEMENT callout      --      (#PCDATA | graphic)      >  
                                /\  
-->
```

```
<!-- **Warning** in "\xgml\9469.dtd", line 1549:  
An element with mixed content should permit data characters ("#PCDATA")  
everywhere.  
The element being declared is "ENTRY".  
| %paracon;) >  
/\  
-->  
<!-- **Warning** in "\xgml\9469.dtd", line 1588:  
An element with mixed content should permit data characters ("#PCDATA")  
everywhere.  
The element being declared is "FTNOTE".  
%paracon;) -(ftnote | ft  
/\  
-->  
<!-- **Warning** in "\xgml\9469.dtd", line 1617:  
An element is not allowed in the document instance because it does not  
appear in any accessible content model or it is completely excluded.  
The element is "CFGPG".  
-->  
<!-- **Warning** in "\xgml\9469.dtd", line 1617:  
An element is not allowed in the document instance because it does not  
appear in any accessible content model or it is completely excluded.  
The element is "CONTASSURPG".  
-->  
<!-- **Warning** in "\xgml\9469.dtd", line 1617:  
An element is not allowed in the document instance because it does not  
appear in any accessible content model or it is completely excluded.  
The element is "COVERINDEX".  
-->  
<!-- **Warning** in "\xgml\9469.dtd", line 1617:  
An element is not allowed in the document instance because it does not  
appear in any accessible content model or it is completely excluded.  
The element is "REFDOC".  
-->  
<!-- **Warning** in "\xgml\9469.dtd", line 1617:  
An element is not allowed in the document instance because it does not  
appear in any accessible content model or it is completely excluded.  
The element is "SHORTTITLE".  
-->  
<!-- **Warning** in "\xgml\9469.dtd", line 1617:  
An element is not allowed in the document instance because it does not  
appear in any accessible content model or it is completely excluded.  
The element is "STALOC".  
-->  
<!-- **Warning** in "\xgml\9469.dtd", line 1617:  
An element is not allowed in the document instance because it does not  
appear in any accessible content model or it is completely excluded.  
The element is "TESTCODE".
```

```
<!-- Capacity points/limits:  
TOTALCAP =163221/200000  
ENTCAP =11872/200000  
ENTCHCAP =6965/70000  
ELEMCAP =5696/70000  
GRPCAP =59200/70000  
EXGRPCAP =416/70000  
EXNMCAP =992/70000  
ATTCAP =44160/200000  
ATTCHCAP =756/70000  
AVGRPCAP =32608/70000  
NOTCAP =192/70000  
NOTCHCAP =364/70000  
IDCAP =0/70000  
IDREFCAP =0/70000  
MAPCAP =0/70000  
LKSETCAP =0/70000  
LKNMCAP =0/70000  
-->  
<!-- 15 warnings reported. -->
```

### 11.3 Sema Mark-it Log

No reported errors

### 11.4 Public Domain sgmls Log

```
sgmls: Warning at \ws\9469.dtd, line 449 in declaration parameter 4:  
End-tag minimization should be "0" for EMPTY element  
sgmls: Warning at \ws\9469.dtd, line 531 in declaration parameter 4:  
End-tag minimization should be "0" for EMPTY element
```

## 12. Appendix D - Detailed CGM Analysis

### 12.1 File D001C004

#### 12.1.1 Parser Log MetaCheck

```
MetaCheck Version 2.10 -- CGM/MIL-D-28003 Conformance Analyzer
Copyright 1988-93 CGM Technology Software
Execution Date: 06/13/94      Time: 10:44:35
```

```
Metafile Examined      : i:\94069\c104.cgm
```

```
Pictures Examined     : All
Elements Examined      : All
Bytes Examined         : All
```

```
===== Trace Report =====
```

```
Tracing not selected.
```

```
===== CGM Conformance Violation Report =====
```

```
No Errors Detected
```

```
===== CALS CGM Profile (MIL-D-28003) Report =====
```

```
No profile discrepancies detected.
```

```
===== Conformance Summary Report =====
```

```
MetaCheck Version 2.10 -- CGM/MIL-D-28003 Conformance Analyzer
Copyright 1988-93 CGM Technology Software
Execution Date: 06/13/94      Time: 10:44:38
```

```
Name of CGM under test: i:\94069\c104.cgm
Encoding                 : Binary
```

```
Pictures Examined      : All
Elements Examined        : All
Bytes Examined           : All
```

```
BEGIN METAFILE string : >allreal.cgm<
METAFILE DESCRIPTION   : >NORTHROP B2 ITDS GEF, MIL-D-28003/BA<
                           >SIC-1<
```

Picture 1 starts at octet offset 202: >Picture 1<

Conformance Summary : This file conforms to the CGM specification.  
This file meets the CALS CGM Profile (MIL-D-28003).

Summary of Testing Performed and Errors Found:

1 Pictures Tested  
272 Elements Tested  
3980 Octets Tested

=====| No Errors Were Detected |=====

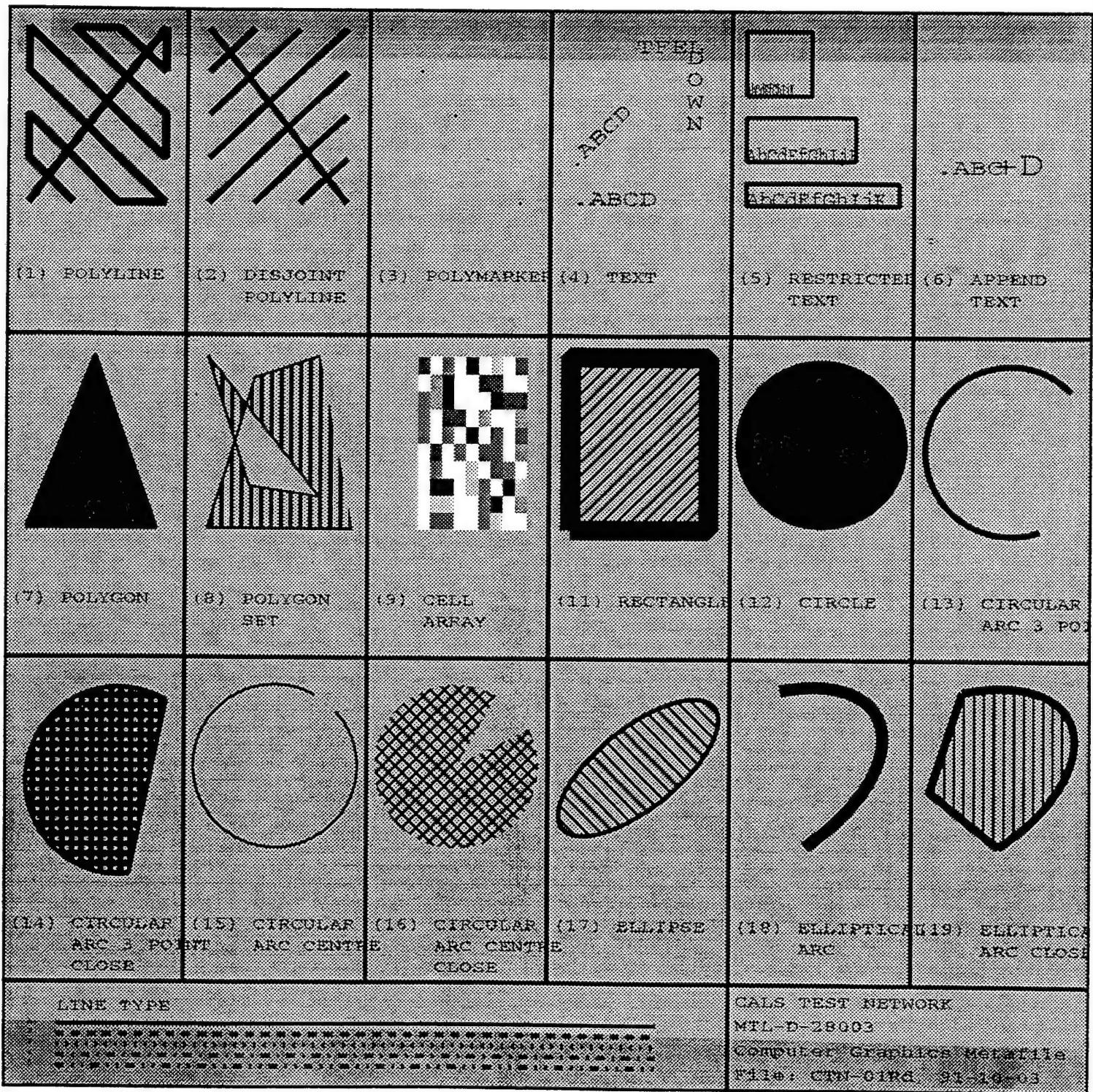
===== End of Conformance Report =====

## 12.1.2 validcgm Log

Analysis for file c104.cgm using table table  
ERROR: illegal in this state (2), std B  
ERROR: required precursor (0, 4) not yet seen  
(14.1, 0) (3, 6, 2) Clip Indicator OFF  
MILSPEC 28003 error: illegal hatch index  
(173, 2354) (5, 24, 2) Hatch Index 6  
(0, 1) occurred 1 time  
(0, 2) occurred 1 time  
(0, 3) occurred 1 time  
(0, 4) occurred 1 time  
(0, 5) occurred 1 time  
(1, 1) occurred 1 time  
(1, 2) occurred 1 time  
(1, 3) occurred 1 time  
(1, 4) occurred 1 time  
(1, 5) occurred 1 time  
(1, 6) occurred 1 time  
(1, 7) occurred 1 time  
(1, 8) occurred 1 time  
(1, 9) occurred 1 time  
(1, 10) occurred 1 time  
(1, 11) occurred 1 time  
(1, 12) occurred 1 time  
(1, 13) occurred 1 time  
(2, 2) occurred 1 time  
(2, 6) occurred 1 time  
(2, 7) occurred 1 time

(3, 2) occurred 1 time  
(3, 6) occurred 1 time  
(3, 6) occurred illegally 1 time  
(4, 1) occurred 32 times  
(4, 3) occurred 5 times  
(4, 4) occurred 50 times  
(4, 7) occurred 3 times  
(4, 9) occurred 1 time  
(4, 12) occurred 2 times  
(4, 15) occurred 3 times  
(4, 16) occurred 2 times  
(4, 17) occurred 2 times  
(4, 18) occurred 2 times  
(4, 19) occurred 1 time  
(5, 2) occurred 17 times  
(5, 3) occurred 17 times  
(5, 4) occurred 17 times  
(5, 6) occurred 5 times  
(5, 7) occurred 5 times  
(5, 8) occurred 5 times  
(5, 10) occurred 3 times  
(5, 12) occurred 5 times  
(5, 13) occurred 1 time  
(5, 14) occurred 7 times  
(5, 15) occurred 5 times  
(5, 16) occurred 7 times  
(5, 17) occurred 4 times  
(5, 18) occurred 1 time  
(5, 22) occurred 10 times  
(5, 23) occurred 8 times  
(5, 24) occurred 7 times  
(5, 27) occurred 2 times  
(5, 28) occurred 2 times  
(5, 29) occurred 2 times  
(5, 30) occurred 10 times  
(5, 31) occurred 7 times  
(5, 34) occurred 1 time

### 12.1.3 Output CADLeaf



## 12.1.4 Output CALSView

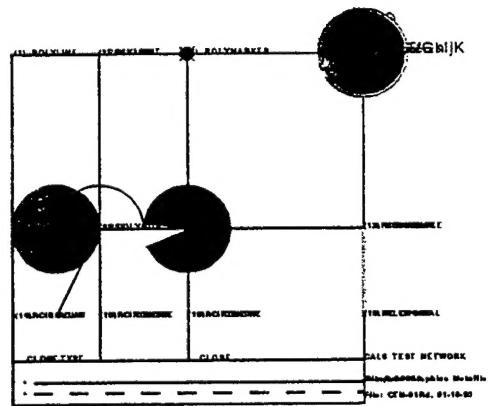
|  |  |  |  |  |  |
|--|--|--|--|--|--|
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

### 12.1.5 Output IslandDraw

|                               |                                                                                            |                                |                |                     |                          |
|-------------------------------|--------------------------------------------------------------------------------------------|--------------------------------|----------------|---------------------|--------------------------|
|                               |                                                                                            |                                |                |                     |                          |
| ) POLYLINE                    | (2) DISJOINT POLYLINE                                                                      | (3) POLYMARKER                 | (4) TEXT       | (5) RESTRICTED TEXT | (6) APPEND TEXT          |
|                               |                                                                                            |                                |                |                     |                          |
| ) POLYGON                     | (8) POLYGON SET                                                                            | (9) CELL ARRAY                 | (11) RECTANGLE | (12) CIRCLE         | (13) CIRCULAR ARC 3 PC   |
|                               |                                                                                            |                                |                |                     |                          |
| 4) CIRCULAR ARC 3 POINT CLOSE | (15) CIRCULAR ARC CENTRE                                                                   | (16) CIRCULAR ARC CENTRE CLOSE | (17) ELLIPSE   | (18) ELLIPTICAL ARC | (19) ELLIPTIC, ARC CLOSE |
| LINE TYPE                     |                                                                                            |                                |                |                     |                          |
|                               | CALS TEST NETWORK<br>MIL-D-28003<br>Computer Graphics Metafile<br>File: CTN-01Rd, 91-10-03 |                                |                |                     |                          |

---

### 12.1.6 Output Harvard Graphics



hg305  
C104

### 12.1.7 Output IslandDraw v4.0

|                                 |                          |                                |                |                     |                                                                                            |
|---------------------------------|--------------------------|--------------------------------|----------------|---------------------|--------------------------------------------------------------------------------------------|
|                                 |                          |                                |                |                     |                                                                                            |
| (1) POLYLINE                    | (2) DISJOINT POLYLINE    | (3) POLYMARKER                 | (4) TEXT       | (5) RESTRICTED TEXT | (6) APPEND TEXT                                                                            |
|                                 |                          |                                |                |                     |                                                                                            |
| (7) POLYGON                     | (8) POLYGON SET          | (9) CELL ARRAY                 | (11) RECTANGLE | (12) CIRCLE         | (13) CIRCULAR ARC 3 POINT                                                                  |
|                                 |                          |                                |                |                     |                                                                                            |
| (14) CIRCULAR ARC 3 POINT CLOSE | (15) CIRCULAR ARC CENTRE | (16) CIRCULAR ARC CENTRE CLOSE | (17) ELLIPSE   | (18) ELLIPTICAL ARC | (19) ELLIPTICAL ARC CLOSE                                                                  |
| LINE TYPE                       |                          |                                |                |                     | CALS TEST NETWORK<br>MIL-D-28003<br>Computer Graphics Metafile<br>File: CTN-01Rd, 91-10-03 |